

# User's Guide



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## FP-5060 Series Micro-Flow Sensors



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The information contained in this document is believed to be correct, but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, patient-connected applications.

# OMEGA FP-5060 Series Micro-Flow Sensors

## WARNING!

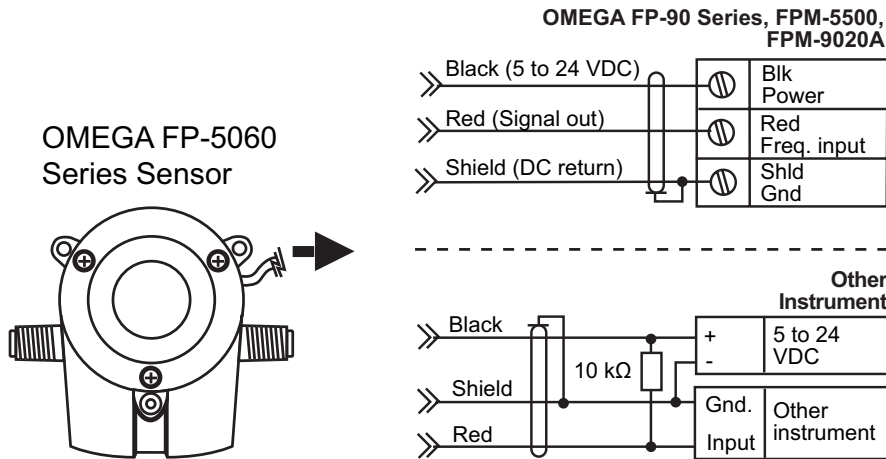


### SAFETY INSTRUCTIONS

1. Do not remove from pressurized lines.
2. Do not exceed maximum temperature/pressure specifications.
3. Do not install/service without following installation instructions (see sensor manual).
4. Wear safety goggles and faceshield during installation/service.
5. Do not alter product construction.
6. Failure to follow safety instructions could result in severe personal injury!



## 1. Instrument Wiring

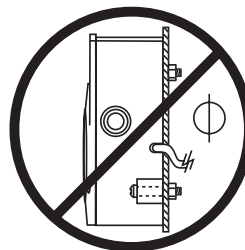
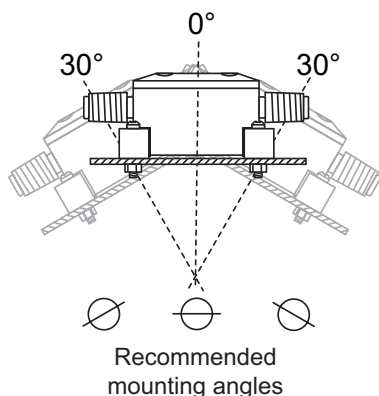


Note: A 10 kΩ pull-up resistor is required as shown, if not provided internal to the instrument. Contact OMEGA Technical Support for assistance.

### Technical Notes:

- Use 2-conductor twisted-pair shielded cable for cable splices up to 300 m (1000 ft) max.
- Maintain cable shield through cable splice.
- Route sensor cable away from AC power lines.
- AUX power required when used with any OMEGA FP90 Series Flow Transmitter.

## 2. Recommended Sensor Position



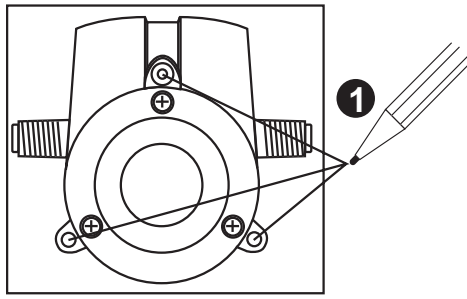
Vertical mounting not recommended

### Technical Notes:

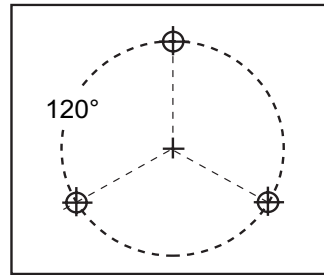
- Horizontal surface mount ( $\pm 30^\circ$ ) recommended for optimum performance.
- Suitable for clean fluids only. Suspended solids will cause mechanical failure.
- ¼ in. NPT or ISO 7/1 - R¼ (male) port connections
- NEMA 4X/IP65 splashproof enclosure

### 3. Surface Mount Instructions

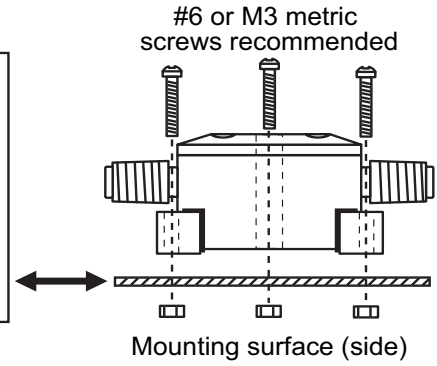
- 2 Remove sensor then use correct screws for panel material.



Mounting surface



Mounting surface (top),  
68 mm (2.68 in.) bolt circle



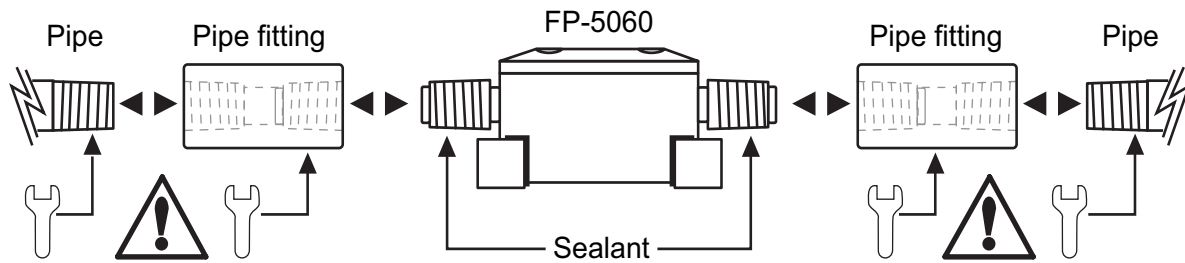
Mounting surface (side)

### 4. Fitting Installation



**CAUTION:**

- Maximum pipe fitting torque: 10 ft - lbs (13 N m).
- DO NOT overtighten. Failure to observe torque specification may permanently damage sensor ports.



**Technical Notes:**

- Compatible fittings (customer supplied): Female union (shown), reducer, or hose barb type.
- Always apply thread sealant to sensor port threads to prevent leakage.

### 5. Calibration

The K-Factors listed below represent the number of pulses the sensor will generate for each engineering unit of fluid which passes. They are listed in U.S. gallons, liters and mL by sensor model:

Sensor Model	PULSES PER U.S. GAL	PULSES PER LITER	PULSES PER mL
FP-5061	9950	2629	2.629
FP-5062	9950	2629	2.629
FP-5063	3160	834.9	0.835
FP-5064	3160	834.9	0.835

## 6. Specifications

### General

Flow range:  
 5061 and 5062: 0.11 to 2.6 lpm (0.03 to 0.7 gpm)  
 5063 and 5064: 1.13 to 12.11 lpm (0.3 to 3.2 gpm)

Linearity:  $\pm 1.2\%$  of full range  
 Repeatability:  $\pm 0.5\%$  of full range  
 Connections:  $\frac{1}{4}$  in. NPT (male) or ISO 7/1 - R $\frac{1}{4}$  (male)  
 Cable length: 8 m (25 ft.), can splice up to 300 m (1000 ft.) max.  
 Cable type: 2-conductor twisted pair w/shield (Belden 8451)  
 Weight: 250 g (9.6 oz.)

### Wetted Materials

- Sensor body and cover: 40% glass filled Polyphenylene Sulfide
- Rotor: PEEK, natural, unfilled
- Rotor O-ring: Viton®
- Cover O-ring: Viton®

### Electrical

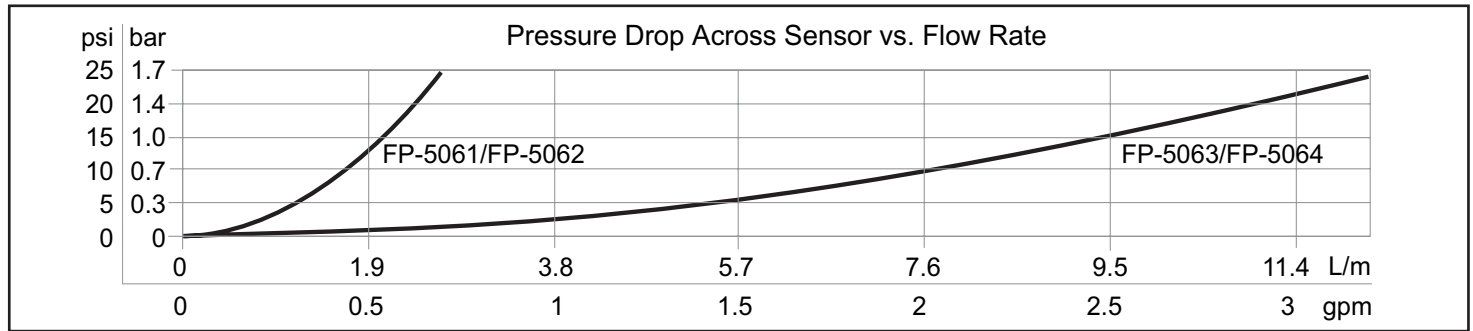
Supply voltage: 5 to 24 VDC, regulated  
 Supply current: 10 mA max.  
 Output type: Open-collector NPN transistor, 10 mA max sink

### Quality Standard

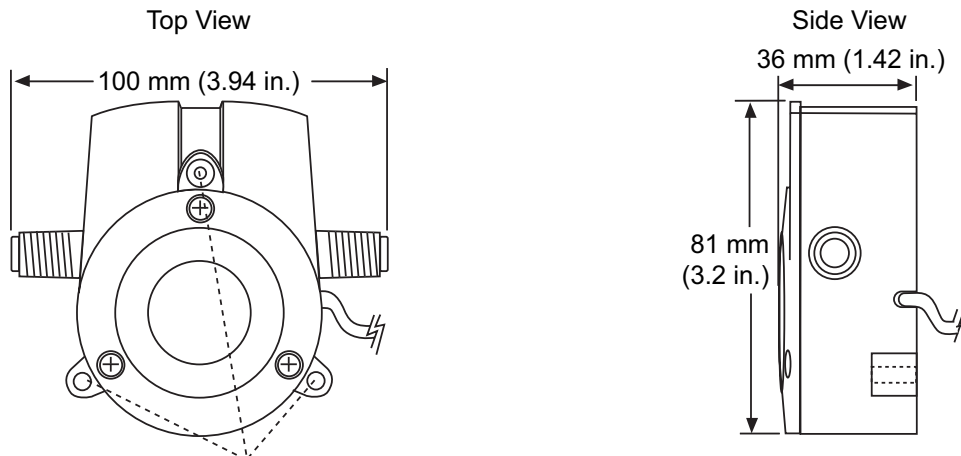
- Manufactured under ISO 9001 and ISO 14001

### Fluid Conditions

Max. pressure/temperature:  
 0 to 80°C (32 to 176°F) @ 5.5 bar (80 psi) max



### Dimensions



Mounting tabs for metric M3 or standard #6 screws on 68 mm (2.68 in.) bolt circle

**NOTES:**



## WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

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## RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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